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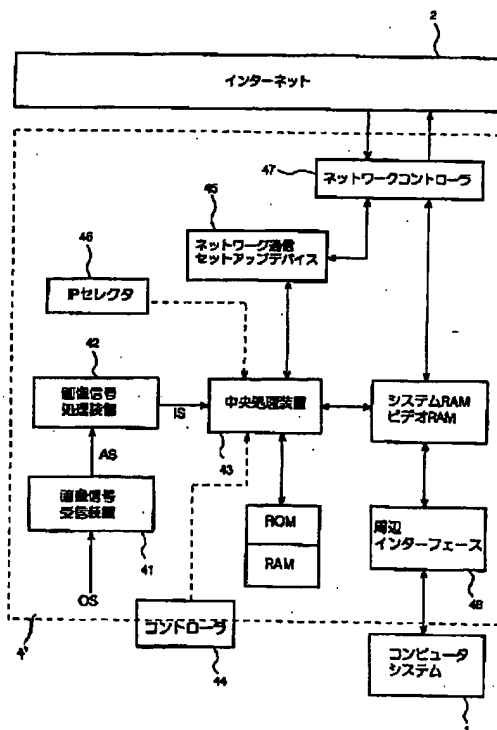
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(54)【発明の名称】 ネットワーク接続用画像入力装置及びランアドオンボックス

(57)【要約】

【課題】 ネットワーク接続用画像入力装置及びランアドオンボックスを提供する。

【解決手段】 本発明は、直接ネットワークシステムに接続することができる。インターネットユーザはコンピュータシステム1上のブラウザを通してネットワークに接続された装置を起動することによって、データの送信と処理を実行することができる。また、画像信号を送信にさしつかえないフォーマットに処理し、そのような画像データをネットワークに送信するための制御信号を生成する中央処理装置43と、中央処理装置43がインターネットへ2の接続を完了できるように画像入力装置を設定するネットワーク通信プロトコルセットアップデバイス45と、通信プロトコルに従って特定のIPアドレスを画像入力装置に供給するIPセクタ46と、画像入力装置をインターネットに接続するために使われるネットワークコントローラ47とを含む構成である。



【特許請求の範囲】

【請求項 1】 対象物からの光学信号を受信する画像信号受信装置と、

前記光学信号を画像信号に変換する画像信号処理装置と、

前記画像信号を定められたフォーマットに変換処理し前記画像信号を出力するするための制御信号を生成する中央処理装置と、

前記中央処理装置にネットワーク通信プロトコルを提供するために前記中央処理装置に接続されたネットワーク通信プロトコルセットアップデバイスと、

前記中央処理装置が前記画像入力装置の位置を突き止めるための IP アドレスを供給するために中央処理装置に接続された IP セレクタと、

前記ネットワーク通信プロトコルセットアップデバイスにより制御され、前記画像信号を出力するネットワークに接続されたネットワークコントローラと、

を備えることを特徴とするネットワーク接続用画像入力装置。

【請求項 2】 前記画像入力装置は、地域ネットワークを形成するためのサーバに接続することができることを特徴とする請求項 1 に記載のネットワーク接続用画像入力装置。

【請求項 3】 データの入出力を提供するため入力装置または出力装置に接続されるインターフェースコントローラと、

前記データを変換処理し、前記データを入出力するための制御信号を生成するための中央処理装置と、

前記中央処理装置にネットワーク通信プロトコルを提供するために前記中央処理装置に接続されたネットワーク通信プロトコルセットアップデバイスと、

前記中央処理装置が画像入力装置の場所を突き止めるための IP アドレスを提供するように中央処理装置に接続された IP セレクタと、

前記データを入力あるいは、出力するためのネットワーク接続のための前記ネットワーク通信プロトコルセットアップデバイスによって制御されるネットワークコントローラと、

を含むことを特徴とするネットワーク接続用ランドオンボックス。

【請求項 4】 前記インターフェースコントローラは SCSI インターフェースであり、前記入力装置はスキャナの形を取ることを特徴とする請求項 3 に記載のネットワーク接続用ランドオンボックス。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明はデジタル画像入力装置に関連したものであり、特にネットワークインターフェース接続用のデジタル画像入力装置に関連したものである。

【0002】

【従来の技術】 パーソナルコンピュータ (PC) は、高速計算と巨大なデータへのアクセスに広範囲に使用されてきた。一般的に PC は入力装置 (例: キーボード、マウス)、演算装置 (例: 中央演算装置、メモリ)、補助記憶装置 (例: ハードディスク)、そして出力装置

(例: モニタ、プリンタ) から構成される。”パーソナルオペレーション”の性質を強調したため、PC ユーザーは周辺機器で PC のシステムを構成するために次々に配置することを奨励する。しかし、情報産業の急速な発展とともに、処理をより速く、そしてよりたくさんのデータにアクセスできるように、PC ユーザーは常に彼らのコンピュータと設備をアップグレードすることを要求されてきた。

【0003】 しかし、インターネットの出現は徐々に PC の定義を変えた。オラクル社によって定義されたネットワークコンピュータアーキテクチャ (NCA) の概念は、サーバの資源と設備を Web 技術を用いたインターネット接続を通じてクライアント末端のコンピュータの間で共有することを意味する。マイクロソフトによって発表された Net PC 構想は、コンピュータファミリーの支流 (しかし完全な代替品ではない) としての Net PC が、オペレーティングシステムとアプリケーションの作業用プラットフォームのための完全なインターネットを求めると考えている。その結果、クライアントとサーバのコンピュータは両方とも同じユーザーインターフェースを共有する。主流のコンピュータの会社によって与えられた PC (Net PC) の定義は異なっているのかもしれないが、”ユーザーインターフェースとしてのインターネット”が PC の開発できわめて重要な画期的事件であろうことは予言されてもさしつかえないだろう。その上、ワールドワイドウェブ (World Wide Web) のために 1995 年にネットスケープ社によって紹介されたナビゲーターブラウザは Web を可能にするコンピューティングの画期的な時代のベールを剥がした。そして Web 技術でのコンピュータ開発を先導し、強力なナビゲータプログラムによってインターネット上に大量のマルチメディアデータ (テキスト、オーディオ、イメージ及び動画) の信号を送ることを可能にした。

【0004】 図 1 は、一般の入力装置、出力装置、コンピュータシステム及びインターネットの関係を示す。ここで、参照符号 1 は従来の技術によるコンピュータシステムを表す。これはアプリケーションプログラム 14、作業用のプラットフォーム 11、ブラウザ 15、ドライバ 12 と 16、そしてインタフェース 13 と 17 から構成される。コンピュータシステム 1 がネットの通信設備 10 (具体的にはモデムやネットカード) を通してインターネット 2 につながることによってインターネットユーザー 3 の 1 つになる。図 1 で提案された操作環境で、画

像データあるいはオーディオデータのようなデジタルデータを引き出すためには、ユーザーは処理を行うコンピュータシステム 1 に入力装置 4 によってデータを入力しなければならない。通常、入力装置 4 は、インターフェース 1.3 (例: インターフェースカード) に接続され、ドライバ 1.2 がそのような処理を成し遂げるために必要とされる。その後、データはさらに作業用プラットフォーム 1.1 でアプリケーションプログラムを使って、ブラウザ 1.5 とネットワーク接続設備 1.0 からインターネットに送信するためのデジタルデータにソフトウェアプログラムによって処理される。

【0005】画像データの入力において、入力装置 4 は、デジタルカメラでもビデオカメラでもイメージスキャナでもよい。そのようにして引き出された、あるいはスキャンされた画像データは作業用プラットフォーム 1.1 へイメージドライバインタフェース (例: TWIN) を通じて送られる。作業用プラットフォーム 1.1 は送信データを画像アプリケーションでネットワーク画像送信の必要事項に従ったフォーマット (例: GIF、JPEG) に処理する。最終的に、データはインターネット上に送信されるようにブラウザ 1.5 とネットワーク接続設備 1.0 を通じて作業用プラットフォーム 1.1 でさらに処理される。

【0006】作業用プラットフォームからはじまりドライバプログラム 1.6、そして周辺機器インターフェース 1.7 から出力装置 5 までのルートは、コンピュータシステム 1 にダウンロードされるためにインターネット 2 に送信されたデータがネットワーク接続機器 1.0 とブラウザ 1.5 を通過したとき要求される。例として画像データの出力を取り上げると、そのような出力装置 5 は画面でも、プリンタでもよい。オーディオデータの場合はそのような出力装置 5 はスピーカーになるだろう。

【0007】

【発明が解決しようとする課題】しかしながら、上記の従来の技術には、下記の問題点があった。

1. コンピュータシステムの導入と入力あるいは出力装置の操作で複雑な手順が要求される。一般的な入力装置や出力装置は、同時に、ハードウェア (インターフェースカード) とソフトウェア (ドライバプログラム) の両方の導入を要求するので PC ユーザーが入力装置あるいは出力装置を導入するのに不便である。

2. 入力あるいは出力データのインターネット上での送信は作業用プラットフォーム、ブラウザ、コンピュータシステムへのネットワーク接続設備の一般的な操作によってのみ成し遂げられ、これは入力あるいは出力装置の使用効率は大幅に低いということである。

3. すべての入出力装置はコンピュータシステムに接続されることが必要とされる。それゆえデータを入出力するためにはインターネットユーザーは通信関係の入出力装置を手に入れなければならない。その結果、周辺機器

を買うための費用がかさむことになる。ユーザーは、コンピュータの進歩に伴ってより新しい装置が紹介されると、またすぐに機器をアップグレードする問題や、それらの導入と操作に直面する。

【0008】本発明は上記の問題を解決するためになされたものであり、インターネット接続のためのインターフェースを備えた入力装置である本発明は、ウェブエナブリングコンピューティング (Web Enabling Computing) によって駆動される Web 接続技術のビジョンに関連して上で述べられた概念に基づいて開発されてきた。本発明は複数のインターネットユーザーがインターネット環境で同じ入力装置を共有できるように、インターネットユーザーが入力装置を Web のように操作できることを提供している。

【0009】したがって、本発明の主な目的はインターネットへのインターフェースの備わった入力装置を提供することである。本発明のもう一つの目的は、インターネット接続インターフェースが提供されるランアドオンボックス (LAN Add-on Box) を提供することである。

【0010】

【課題を解決するための手段】本発明の装置は直接ネットワークシステムに接続されることができる。インターネットユーザーはデータの送信と処理を、コンピュータシステム上のブラウザを通してネットワークに接続された装置を起動することによって、実行することができる。この目的のために本発明は本質上、画像信号を生成するための画像信号生成装置から構成されなければならない。すなわち画像信号を送信にさしつかえないフォーマットに処理し、そのような画像データをネットワークに送信するための制御信号を生成する中央処理装置と、中央処理装置がインターネットへの接続を完了できるように画像入力装置を設定するネットワーク通信プロトコルセットアップデバイスと、通信プロトコルに従って特定の IP アドレスを画像入力装置に供給する IP セレクタと、画像入力装置をインターネットに接続するために使われるネットワークコントローラから構成される。

【0011】ここで、画像入力装置はデジタルカメラ、ビデオカメラ、イメージスキャナ、あるいはイメージレトリバー (Image Retriever) の形態であってよい。本発明のネットワーク接続用ランアドオンボックスは従来の技術の入出力装置に接続される。それによって装置は、インターネットユーザーによって直接起動することができる Web を提供するために、コンピュータシステムをとばしてインターネットに直接接続することができる。このようにしてデータ入力の目的を達成する。

【0012】

【発明の実施の形態】以下、本発明の実施の形態を図面

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に基づいて詳細に説明する。まず、図 2 を参照する。ここで、点線の囲みで示されたインターネットユーザー 3' のコンピュータシステムは、作業用プラットフォーム 11、ブラウザ 15、アプリケーション 14、そしてネットワーク接続機器 10 から構成される。本発明のコンピュータシステムは図 1 において説明された公知技術のコンピュータシステムと異なる。本発明におけるインターネットユーザー 3' のコンピュータシステムは、NC A プロトコルや Net P C の定義で提出された” ネットワークコンピュータ” の機器構成に似ている。機器構成システム下のインターネットユーザー 3' は、図 1 に示されているような入力装置 4 と、出力装置 5 と、それらの周辺装置のインターフェースとドライバプログラムがない状態でインターネットに接続された入力装置 4' と出力装置 5' を通じて入出力を成し遂げる。インターネットユーザー 3' は、ブラウザ 15 とネットワーク接続設備 10 を用いてインターネット 2 環境に入る。ここでブラウザ 15 がインターネット 2 上で入力装置 4' や出力装置 5' を直接起動することをユーザーが信頼することができるように、ユニフォームリソースロケータ (Uniform resource locator: URL) は、ブラウザ 15 によって入力装置 4' と出力装置 5' のために最初に定義されなくてはならない。装置が起動されたらインターネットユーザー 3' はインターネット 2 を通じてデータを書きこんだり読み出ししたりしはじめる。そしてデータは迅速に入力装置 4' あるいは出力装置 5' に送信される。

【0013】図 3 を参照すると、画像入力装置は、入力装置 4' とインターネット 2 の間の接続の機能的ブロックを説明するための一例として使われている。画像の入力装置 4' が対象物の画像を引き出すかスキャンするかしたとき、画像信号受信装置 41 は、対象物より発生した光学信号 (OS) を受け取る。そして OS を画像信号処理装置 42 に送るためのアナログ電圧信号 (AS) に変換する。

【0014】信号処理装置 42 は次々にアナログ電圧信号 (AS) をデジタル電圧信号に変換する。そしてデジタル電圧信号を中央処理装置 43 に送れるように画像信号 (IS) を生成するために処理する。中央処理装置 43 は、ROM や S R A M の演算や処理を経て送信可能な画像信号を生成し、コンピュータシステム 1、あるいはインターネット 2 に送信できるようにシステム RAM やビデオ RAM に画像信号を記録する。送信可能な画像信号は、G I F または J P E G フォーマットであろう。画像信号受信装置 41 はリニア CCD か、エリア CCD か、あるいは C I S の形を取ることができる。すなわち画像入力装置 4' は、デジタルカメラ、イメージスキャナ、あるいはイメージリトリーバの形態とすることができる。

【0015】さらに図 3 は本発明の画像入力装置 4' へ

の制御信号の流れを示す。本発明の画像入力装置 4' は、中央処理装置 43 と、それがインターネット通信プロトコルの設定を獲得するために中央処理装置 43 に接続されたネットワーク通信プロトコルセットアップデバイス 45 と、中央処理装置に接続され、中央処理装置がイメージ入力装置の場所を突き止めることができるように IP アドレスを供給する IP セレクタ 46 と、インターネット 2 に接続し、画像信号を出力するためにネットワーク通信プロトコルセットアップデバイス 45 によって制御されるネットワークコントローラ 47 からなる。

【0016】ここで、中央処理装置 43 は、インターネットユーザー 3' によって起動された画像入力装置 4' からの信号の入力を直接調べる。ネットワーク通信セットアップデバイス 45 は、TCP/IP プロトコル、イーサネットドライバ、ネットワーク OS、イーサネットコントローラ、あるいはほかのプロトコル、もしくは地域ネットワーク (例: Novell system) で使われるプロトコルを包含することができる。IP セレクタ 46 は、制御信号をネットワーク通信セットアップデバイス 45 に次々と供給する中央処理装置 43 に、固定 IP アドレスを入力するのに使われる。それによって画像入力装置 4' に固定 IP アドレスは与えられる。そして画像入力装置 4' は、図 2 で述べられたインターネットユーザー 3' によってブラウザ 15 を通じてインターネット 2 の上で直接起動する事ができるネットとなる。ネットワーク通信プロトコルセットアップデバイス 45 によりさらに接続されると、ネットワークコントローラ 47 は本発明をインターネット 2 に接続するインターフェースになる。ネットワーク通信プロトコルセットアップデバイス 45 がネットワークコントローラ 47 によってインターネット 2 に接続され通信プロトコルの設定を終えたとき、中央処理装置 43 はシステム RAM あるいはビデオ RAM に記録されたそれらの画像信号を、必要とされる対象物の画像信号をインターネットユーザー 3 が引き出すことができるように、ネットワークに送信する。

【0017】図 4 は、図 3 よりひきだされる本発明のもうひとつの形態を示す。図 4 においてコントローラ 44 は、システム RAM やビデオ RAM に記録された画像信号が周辺インターフェース 48 を通じてコンピュータシステム 1 に送信されるのか、インターネット 2 にネットワークコントローラ 47 を通じて送信されるのかどうか決定するための制御信号を中央処理装置 43 に供給するために提供されている。もし信号が制御信号によって決定されてコンピュータシステム 1 に送信されたら画像信号のために要求される処理は従来の技術と同じものである。もし信号が制御信号によって決定されてインターネット 2 に送信されたら図 3 で説明された処理と制御の流れにおけるネットワーク通信プロトコルセットアップデバイス 45 を通じて中央処理装置 43 はそのネットワー

ク通信プロトコルを得る。

【0018】図2と3は、インターネットユーザー3'が本発明の画像入力装置を起動する流れを説明する。入力装置4'の電源が入れたとき中央処理装置43はそのIPアドレスを設定しインターネット2にネットワーク通信プロトコルセットアップデバイス45を通じて接続する。インターネットユーザー3'もまたネットワーク接続設備10を通じてインターネット2に接続する。インターネットユーザー3'はブラウザ15を起動し、入力装置4'にブラウザ15のプログラムによって接続しなければならない。とかくするうちに、ブラウザは、入力装置4'に組み込まれたホームページを、当該のインターネット2上でネットがブラウザ15によって起動されてきたのとあたかも同じ手順で起動するだろう。その結果、インターネットユーザー3'はホームページ上で入力装置のパラメータを設定することができ、あたかもそのようなアクセスはファイルをインターネット2からダウンロードすることによって成し遂げられるかのように画像データにアクセスすることができる。

【0019】図5はインターネット2への接続の本発明のもう一つの形態を示している。ここで、入力装置4'、出力装置5'、そしてインターネットユーザー3'はサーバ6による接続を通じて地域ネットワーク(Regional Network)7を形成する。地域ネットワーク7は、広大なネットのインターネット2にさらにつながらるだろう。そのような機器構成のもとで異なるネットワークからのインターネットユーザー3'はインターネット2と地域ネットワーク7の間の接続により、出力装置5'あるいは本発明の画像入力装置4'を起動することができる。

【0020】図6は本発明のもう一つの実施例を示す。それは、インターネットに接続するインターフェースを提供するランアドオンボックス8に関連する。ランアドオンボックスは従来の技術の入力装置(あるいは、出力装置)につなぐことができる。すなわち装置をコンピュータシステムをとばしてインターネットに直接つなぐことができる。そしてその装置は、インターネットユーザーによって直接起動することができるネットとして定義される。ランアドオンボックス8は電氣的に入力装置4あるいは出力装置5に接続される。ここで、一般的に入力装置4あるいは、出力装置5はコンピュータシステム1に接続することのできる装置である。入力装置4は画像入力装置(スキャナ、ビデオカメラ、あるいはデジタルカメラのようなもの)あるいは、オーディオ入力装置の形をとり、出力装置5はプリンタ等の形をとるだろう。図5においてはインターネット接続のためのインターフェースとともに提供されるランアドオンボックス8に接続された入力装置4のみ示されているが、ランアドオンボックスは出力装置5にも接続されることができ

【0021】図6に図解されているようにランアドオンボックス8はインターフェースコントローラ49と、中央処理装置43と、IPセクタ46と、ネットワーク通信プロトコルセットアップデバイス45と、ネットワークコントローラ47からなる。画像入力装置は本発明のこの形態を説明するために再度使われる。従来の技術である入力装置4は、インターフェースコントローラ49に直接接続され入力画像信号ISを供給する。図3で説明された制御信号の流れのもとでインターフェースコントローラ49は、さらに送信するために画像信号ISを中央処理装置43を通じてシステムRAMに送る。中央処理装置43は入力装置が固定されたIPアドレスを持つことができるように通信プロトコルにアクセスし、ネットワーク通信プロトコルセットアップデバイス45と固定IPアドレスを通じてインターネットユーザー3'になる。固定IPアドレスは図3で明らかにされたようにネットワーク接続の手順でIPセクタによって決定される。それ故に入力装置4はブラウザ15によってインターネット2を通じて直接起動されることができ、ネットになる。ネットワーク通信セットアップデバイス45はインターネット2に接続するためのインターフェースを供給するためネットワークコントローラ47にさらに接続される。ネットワーク通信プロトコルセットアップデバイス45がインターネット2へネットワークコントローラ47を経由して接続し、通信プロトコルの設定を完了したら、中央処理装置43はシステムRAMに記録された画像信号をそれらの必要とされる対象物の画像信号にアクセスするために使う入力装置4を起動したインターネットユーザーのためにインターネット2に送信する。その結果、本発明であるランアドオンボックス8は、公知技術の入力装置4がブラウザ15によって直接起動されるネットになることを可能とし、インターネット機器構成に含まれる入力装置になることを可能とする。

【0022】ランアドオンボックス8はスキャナやデジタルカメラ、あるいはビデオカメラのような画像入力装置に接続されることに限定されない。それはほかの形態の入力装置あるいは出力装置につながれることも可能である。本発明は既存のネットワークシステムへの容易な接続を可能にすることによって簡単な導入と便利で役に立つ使い勝手を達成する。単独のインターネットユーザーはそのIPアドレスを選択するための制御者であることと、その調節作業を行うことによりインターネットにおける一つのネットとなる。さらに本発明は周辺機器の購入にかかるコストを節約するために多数のユーザーが同じ入力あるいは出力装置を使うことを可能にする。ハードウェアの利用効率も本発明がネットワークに直接送信することを可能にすることによって高められる。

【図面の簡単な説明】

【図1】従来の技術である入力装置、出力装置、コンピ

ユータシステムおよびインターネットの間の接続を説明したブロックチャートを示す図である。

【図2】本発明の入力装置とインターネットユーザー間の接続の説明したブロックチャートを示す図である。

【図3】本発明の画像入力装置の機能を説明したブロックチャートを示す図である。

【図4】図3に示す画像入力装置の別の実施例の機能を説明したブロックチャートを示す図である。

【図5】本発明の画像入力装置と地域ネットワークシステムの結合により達成されるインターネットへの接続を説明したブロックチャートを示す図である。

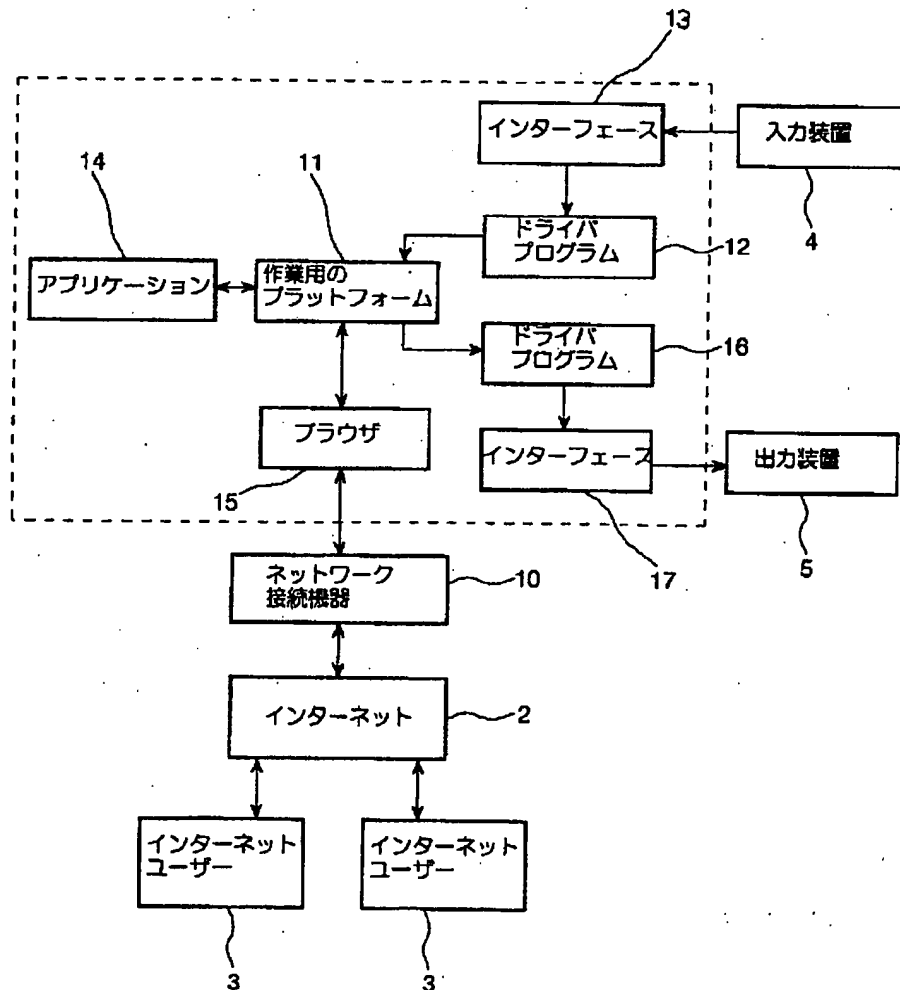
【図6】これは本発明のもう一つの形態の、インターネット接続インターフェースを提供するランアドオンボックスを説明したブロックチャートを示す図である。

【符号の説明】

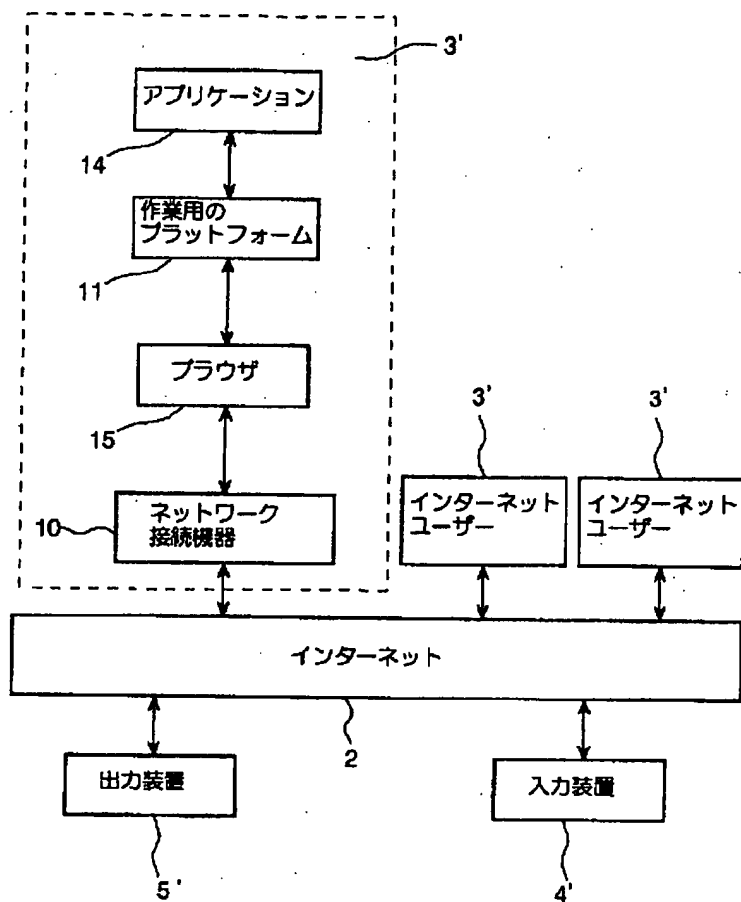
- 1 コンピュータシステム
- 2 インターネット
- 3' インターネットユーザー
- 4' 入力装置

- 4 1 画像信号受信装置
- 4 2 画像信号処理装置
- 4 3 中央処理装置
- 4 4 コントローラ
- 4 5 ネットワーク通信プロトコルセットアップデバイス
- 4 6 IPセクタ
- 4 7 ネットワークコントローラ
- 4 8 周辺インターフェース
- 4 9 インターフェースコントローラ
- 5' 出力装置
- 6 サーバ
- 7 地域ネットワーク
- 8 ランアドオンボックス
- 1 0 ネットワーク接続機器
- 1 1 作業用プラットフォーム
- 1 4 アプリケーション
- 1 5 ブラウザ

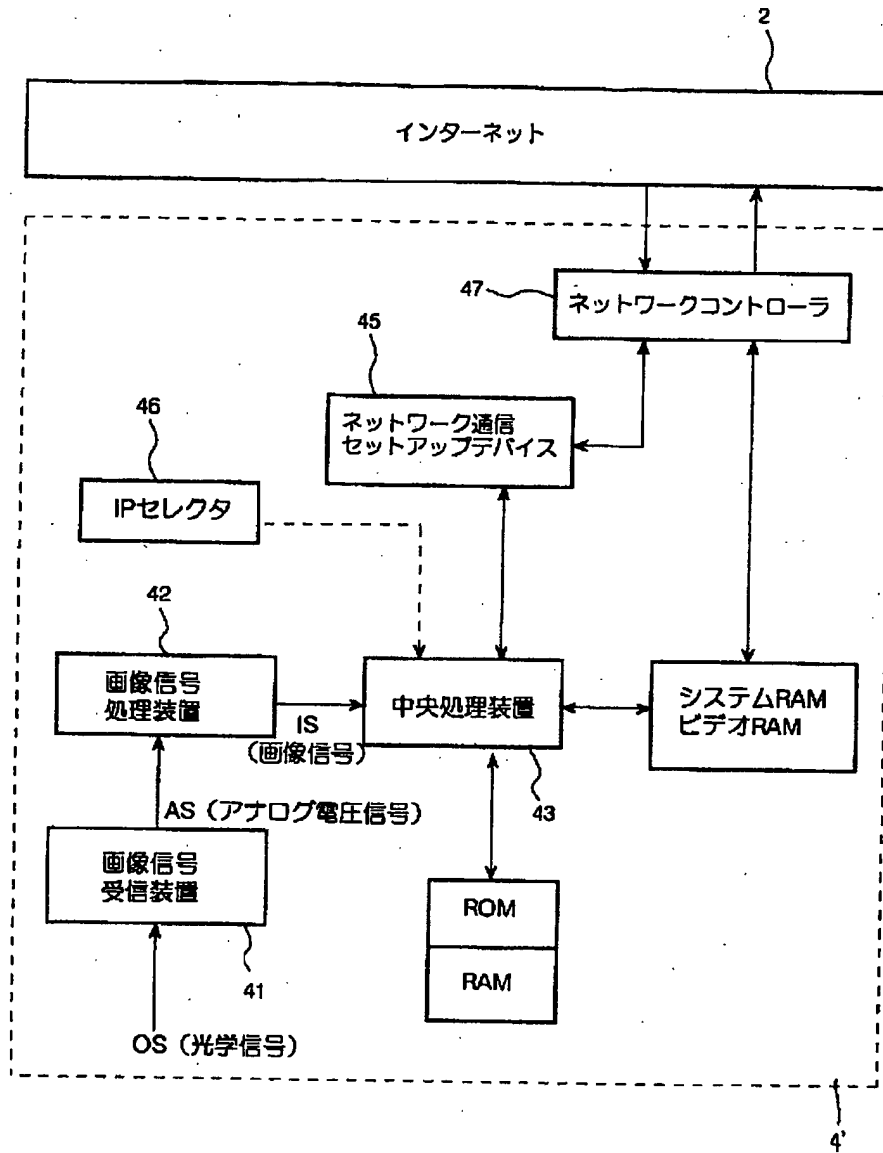
【図1】



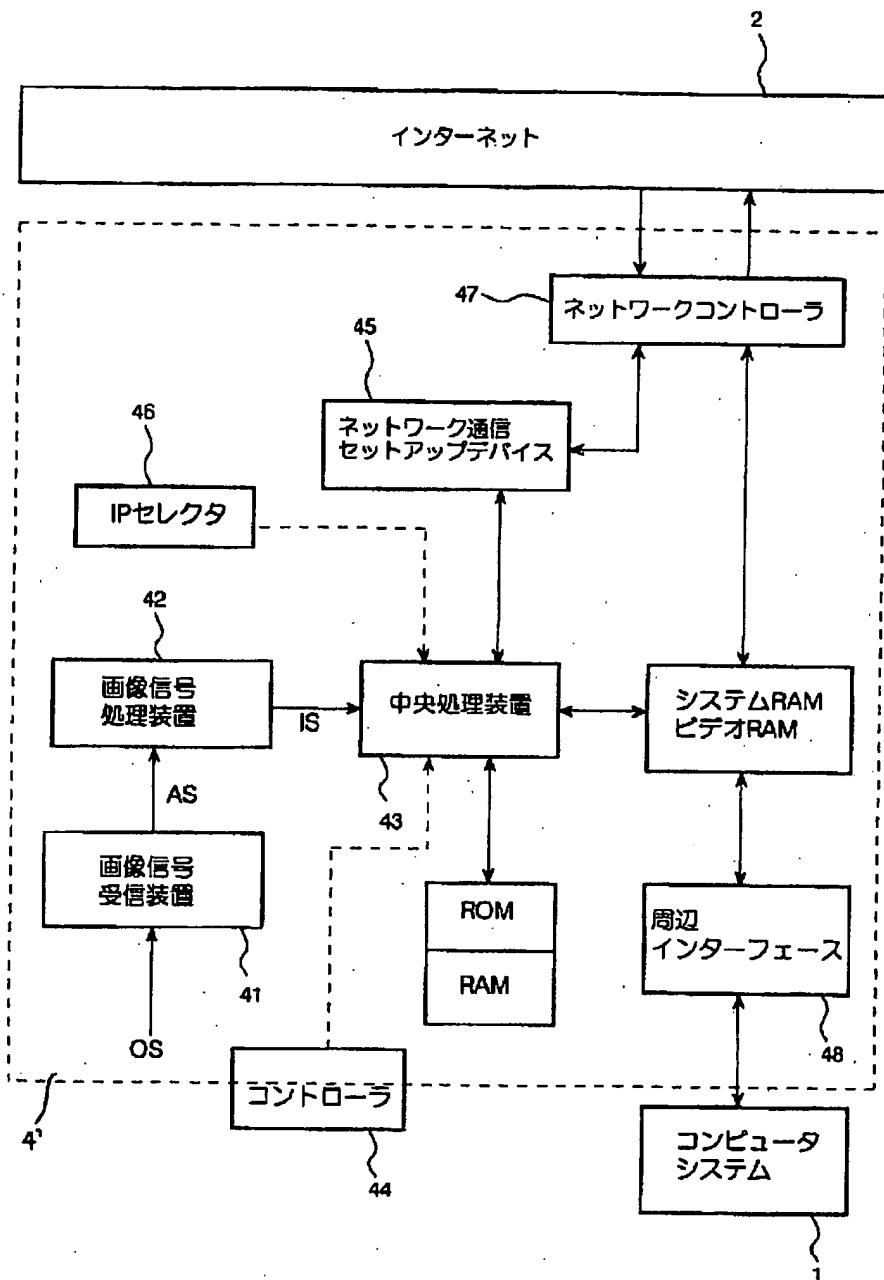
【図2】



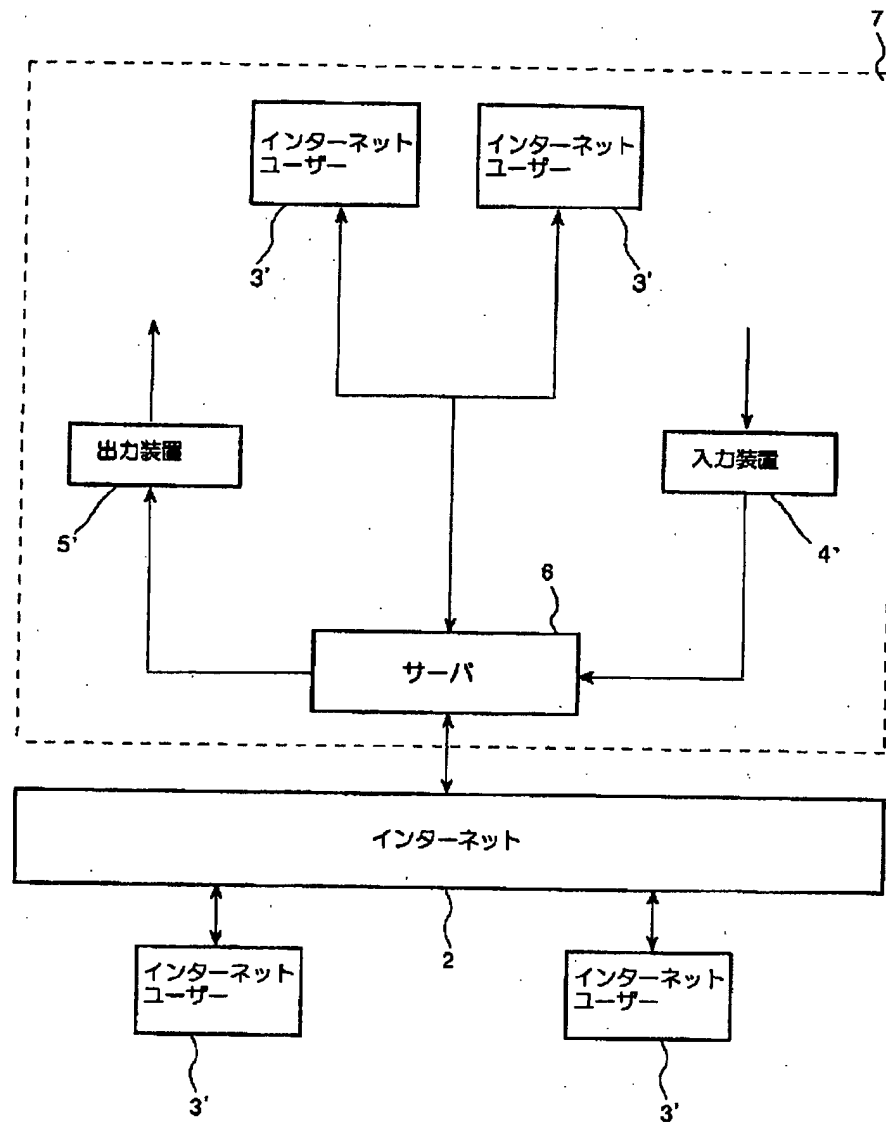
【図3】



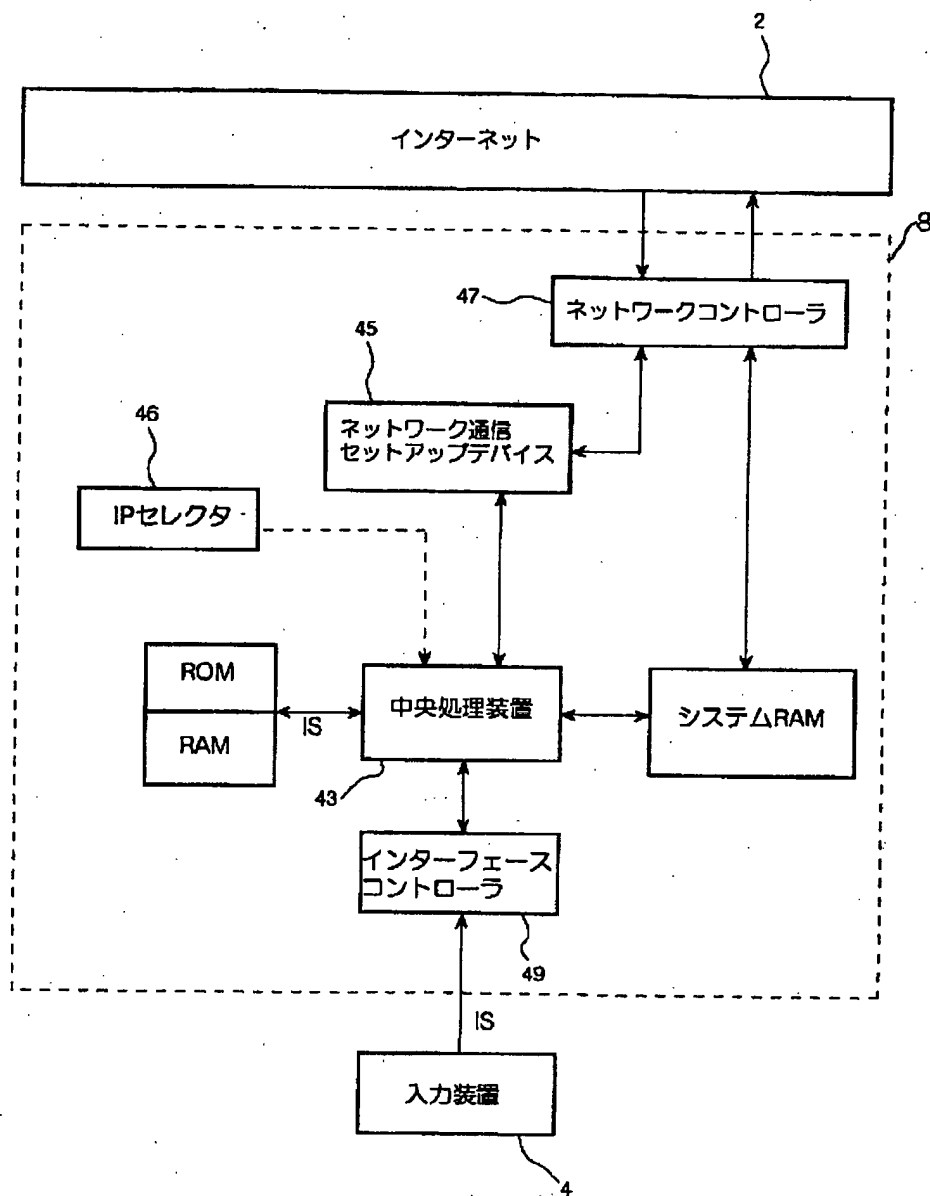
【図4】



【図 5】



【図 6】



PATENT ABSTRACTS OF JAPAN

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(30)Priority

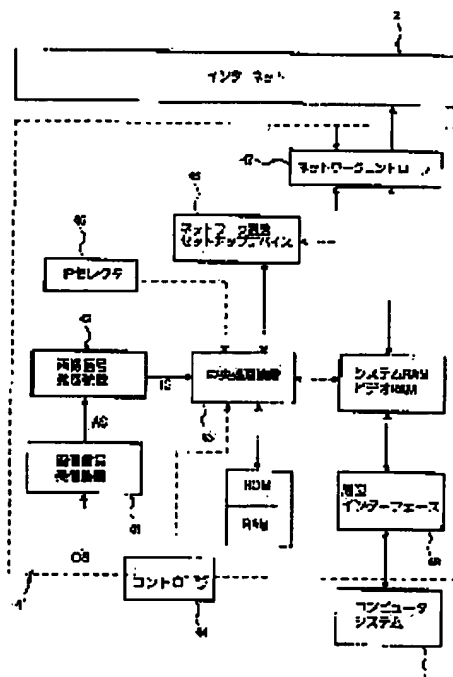
Priority number : 97 86210220 Priority date : 20.06.1997 Priority country : TW

(54) IMAGE INPUT DEVICE FOR NETWORK CONNECTION AND RUN AD-ON BOX

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an image input device for network connection and a run ad-on box.

SOLUTION: This device directly connects to a network system. Through a browser working on a computer system 1, an Internet user starts the device connected to a network to execute data transmission and processing. Furthermore, the device includes a central processing unit 43 that processes an image signal in a format suitable for transmission, to generate a control signal used to send image data to the network; a network communication protocol setup device 45 that sets the image input device so that the central processing unit 43 completes the connection to the Internet 2; an IP selector 46 that gives a specific IP address to the image input device according to a communication protocol; and a network controller 47 that is used to connect the image input device to the Internet.



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CLAIMS

[Claim(s)]

[Claim 1] The picture signal receiving set which receives the optical signal from an object, and the picture signal processor which changes the aforementioned optical signal into a picture signal, The central processing unit which generates the control signal for carrying out transform processing to the format which was able to define the aforementioned picture signal, and outputting the aforementioned picture signal, The network communication protocol setup device connected to the aforementioned central processing unit in order to provide the aforementioned central processing unit with a network communication protocol, IP selector connected to the central processing unit in order to supply the IP address for the aforementioned central processing unit tracing the position of the aforementioned picture input device, The picture input device for network connections characterized by having the network controller connected to the network which is controlled by the aforementioned network communication protocol setup device, and outputs the aforementioned picture signal.

[Claim 2] The aforementioned picture input device is a picture input device for network connections according to claim 1 characterized by being connectable with the server for forming a regional network.

[Claim 3] The interface controller connected to an input unit or an output unit in order to offer I/O of data, The central processing unit for generating the control signal for carrying out transform processing of the aforementioned data, and outputting and inputting the aforementioned data, The network communication protocol setup device connected to the aforementioned central processing unit in order to provide the aforementioned central processing unit with a network communication protocol, The aforementioned data are inputted as IP selector connected to the central processing unit so that the IP address for the aforementioned central processing unit tracing the location of a picture input device might be offered. Or the run add-on box for network connections characterized by including the network controller controlled by the aforementioned network communication protocol setup device for the network connection for outputting.

[Claim 4] It is the run add-on box for network connections according to claim 3 which the aforementioned interface controller is SCSI interface and is characterized by the aforementioned input unit taking the type of a scanner.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the digital picture input device for network interface connection especially in relation to a digital picture input device.

[0002]

[Description of the Prior Art] The personal computer (PC) has been broadly used for a high-speed calculation and the access to huge data. Generally PC consists of an input unit (an example:keyboard, mouse), an arithmetic unit (an example:central arithmetic unit, memory), auxiliary memory (example:hard disk), and an output unit (an example:monitor, printer). Since the property of "personal operation" was emphasized, since PC user constitutes the system of PC from a peripheral device, he gives encouragement in arranging one after another. However, PC user has been required to always upgrade their computer and a facility so that processing can be more quickly accessed with rapid development of an information industry at more data.

[0003] However, the occurrence of internet changed the definition of PC gradually. It means sharing the idea of the network computer architecture (NCA) defined by the oracle company between the computers of the client terminal through the Internet connectivity which used Web technique for the resources of a server, and the facility. Net announced by Microsoft PC design is Net as a branch (however, it is not a perfect substitute) of a computer family. PC thinks that it asks for the perfect internet for the platform for work of an operating system and application. Consequently, the user interface with the both same [the computer of a client and a server] is shared. What "the internet as a user interface" will be a very important epoch-making incident in a development of PC will not interfere, even if it is predicted, although definitions of PC (Net PC) given by the business firm of a mainstream computer may differ. Moreover, the navigator browser introduced by the netscape company in 1995 for World Wide Web (World Wide Web) removed the bail of the epoch-making age of computing which makes Web possible. And the computer development with Web technique was led and it was enabled to send the signal of a lot of multimedia data (a text, an audio, an image, and animation) on internet by the powerful navigator program.

[0004] Drawing 1 shows the relation between a common input unit, an output unit, a computer system, and internet. Here, a reference mark 1 expresses the computer system by the prior art. This consists of an application program 14, the platform 11 for work, a browser 15, drivers 12 and 16, and interfaces 13 and 17. It is set to one of the internet users 3 when a computer system 1 is connected with internet 2 through the communication equipment 10 (specifically a modem and a network card) of a network. In order to pull out digital data like image data or audio data by the operating environment proposed in drawing 1, a user has to input data into the computer system 1 which processes with an input unit 4. Usually, it connects with an interface 13 (example:interface card), and an input unit 4 is needed in order that a driver 12 may finish such processing. Then, data are processed by the software program by the digital data for transmitting to internet from a browser 15 and the network-connection facility 10 further on the platform for work 11 using an application program.

[0005] In the input of image data, a digital camera, a video camera, or an image scanner is

sufficient as an input unit 4. The image data by which made it such, and was pulled out or the scan was carried out is sent to the platform for work 11 through an image driver interface (example: TWAIN). The platform for work 11 processes transmit data to the format (example : GIF, JPEG) which followed the required matter of network picture image sending with picture image application. Finally, data are further processed through a browser 15 and the network-connection facility 10 on the platform for work 11 so that it may be transmitted on internet. [0006] It is required, when the data transmitted to internet 2 pass the network-connection device 10 and the browser 15, in order to begin from the platform for work and to download the root from the driver program 16 and the peripheral-device interface 17 to an output unit 5 to a computer system 1. When the output of image data is taken up as an example, a screen or a printer is sufficient as such an output unit 5. In the case of audio data, such an output unit 5 will become a loudspeaker.

[0007]

[Problem(s) to be Solved by the Invention] However, there was the following trouble in the above-mentioned prior art.

1. A complicated procedure is demanded by an introduction and input of a computer system, or operation of an output unit. Simultaneously, since a general input unit and a general output unit demand an introduction of both hardware (interface card) and software (driver program), they are inconvenient for PC user to introduce an input unit or an output unit.
2. Sending on an input or the internet of output data is finished only by general operation of the network-connection facility to the platform for work, a browser, and a computer system, I understand that an input or the use luminous efficacy of an output unit is sharply low, and this has it.
3. To connect all I/O devices to a computer system is needed. So, in order to output and input data, an internet user has to get a communication-related I/O device. Consequently, the cost for buying a peripheral device will increase. A user will be faced with the problems which upgrade a device immediately, and those introductions and operations if newer equipment is introduced in connection with progress of a computer.

[0008] It was made in order that this invention might solve the above-mentioned problem, and this invention which is the input unit equipped with the interface for an Internet connectivity has been developed based on the idea expressed in the top in relation to the vision of Web connection technique driven by ***** nave ring computing (Web Enabling Computing). It offers that an internet user can operate an input unit like Web so that, as for this invention, two or more internet users can share the same input unit in an internet environment.

[0009] Therefore, the main purposes of this invention are offering the input unit with which the interface to internet was equipped. Another purpose of this invention is offering the run add-on box (LAN Add-on Box) where an Internet connectivity interface's is offered.

[0010]

[Means for Solving the Problem] The equipment of this invention is connectable with a direct network system. An internet user can perform by starting the equipment to which sending and processing of data were connected to the network through the browser on a computer system. this invention must consist of the picture signal generation equipment for generating a picture signal on essence for this purpose. That is, a picture signal is processed to the format which does not have a hindrance in sending, and it consists of a network controller used in order to connect a picture input device to internet with the network communication protocol setup device which sets up a picture input device, and IP selector which supplies a specific IP address to a picture input device according to a communications protocol so that the central processing unit which generates the control signal for transmitting such image data to a network, and a central processing unit can complete the connection with internet.

[0011] Here, a picture input device may be the gestalt of a digital camera, a video camera, an image scanner, or an image retriever (Image Retriever). The run add-on box for network connections of this invention is connected to the I/O device of a prior art. By it, by the internet user, equipment can fly a computer system in order to offer Web which can be started directly, and it can carry out a direct file to internet. Thus, the purpose of a data input is attained.

[0012]

[Embodiments of the Invention] Hereafter, the gestalt of operation of this invention is explained in detail based on a drawing. First, drawing 2 is referred to. Here, the computer system of internet user 3' shown in the enclosure of a dotted line consists of the platform for work 11, a browser 15, application 14, and a network-connection device 10. The computer system of this invention differs from the computer system of the well-known technique explained in drawing 1. The computer system of internet user 3' in this invention resembles the configuration of the "network computer" submitted by the definition of NCA protocol or NetPC. configuration -- a system -- the bottom -- internet -- a user -- three -- ' -- drawing -- one -- being shown -- having -- **** -- as -- an input unit -- four -- an output unit -- five -- those -- a peripheral device -- an interface -- a driver -- a program -- there is nothing -- the status -- internet -- connecting -- having had -- an input unit -- four -- ' -- an output unit -- five -- ' -- passing -- I/O -- finishing. Internet user 3' goes into internet 2 environment using a browser 15 and the network-connection facility 10. A uniform resource locator (Uniform resource locator:URL) must be first defined by the browser 15 for input unit 4' and output unit 5' so that a user can trust that a browser 15 starts input unit 4' and output unit 5' directly on internet 2 here. If equipment is started, internet user 3' will begin to write in or read data through internet 2. And data are quickly transmitted to input unit 4' or output unit 5'.

[0013] Reference of drawing 3 uses the picture input device as an example for explaining a functional block of the connection between input unit 4' and the internet 2. When it carries out whether input unit 4' of a picture image pulls out the picture image of an object, or a scan is carried out, the picture signal receiving set 41 receives the optical signal (OS) which occurred from the object. And OS is changed into the analog voltage signal (AS) for sending to the picture signal processor 42.

[0014] A signal processor 42 changes an analog voltage signal (AS) into a digital voltage signal one after another. And it processes in order to generate a picture signal (IS) so that a digital voltage signal can be sent to a central processing unit 43. A central processing unit 43 generates the picture signal which can be transmitted through the operation and processing of ROM or SRAM, and a picture signal is recorded on system RAM or a Video RAM as it can transmit to the computer system 1 or the internet 2. The picture signal which can be transmitted may be GIF or JPEG format. The picture signal receiving set 41 can take the type of linear CCD, area CCD, or CIS. That is, picture-input-device 4' can be made into the gestalt of a digital camera, an image scanner, or image lithograph *****.

[0015] Furthermore, drawing 3 shows flowing of the control signal to picture-input-device 4' of this invention. It connects with a central processing unit with the network communication protocol setup device 45 connected to the central processing unit 43 in order that it might gain a setup of an internet communications protocol, a central processing unit 43 and, it connects with internet 2, and picture-input-device 4' of this invention becomes the IP selector 46 which supplies an IP address so that a central processing unit can trace the location of an image input unit from the network controller 47 controlled by the network communication protocol setup device 45, in order to output a picture signal.

[0016] Here, a central processing unit 43 investigates directly the input of the signal from picture-input-device 4' started by internet user 3'. The network communication setup device 45 can include TCP/IP protocol, an Ethernet driver, Network OS, an Ethernet controller, other protocols, or the protocol used by the regional network (example:Novell system). It is used for the IP selector 46 inputting a fixed IP address into the central processing unit 43 which supplies a control signal to the network communication setup device 45 one after another. A fixed IP address is given to picture-input-device 4' by it. And picture-input-device 4' becomes the network which can be directly started on internet 2 through a browser 15 by internet user 3' stated in drawing 2. If the network communication protocol setup device 45 connects further, the network controller 47 will become the interface which connects this invention to internet 2. When the network controller 47 connects with internet 2 and the network communication protocol setup device 45 finishes a setup of a communications protocol by it, a central processing unit 43 is transmitted to a network so that the internet user 3 can pull out the

picture signal of the object for which those picture signals recorded on system RAM or the Video RAM are needed.

[0017] Drawing 4 shows another gestalt of this invention which starts being subtracted from drawing 3. It is provided in order that a controller 44 may supply the control signal for determining whether to be that it is transmitted by internet 2 through the network controller 47 whether the picture signal recorded on system RAM or the Video RAM is transmitted to a computer system 1 through a peripheral interface adapter 48 to a central processing unit 43 in drawing 4. Supposing a signal is determined by the control signal and transmitted to a computer system 1, processing demanded for a picture signal is the same as that of a prior art. Supposing a signal is determined by the control signal and transmitted to internet 2, a central processing unit 43 will obtain the network communication protocol through the network communication protocol setup device 45 in processing and the control flow which were explained in drawing 3.

[0018] Drawings 2 and 3 explain flowing with which internet user 3' starts the picture input device of this invention. When put into the power of input unit 4', a central processing unit 43 sets up the IP address, and connects it to internet 2 through the network communication protocol setup device 45. Internet user 3' is also connected to internet 2 through the network-connection facility 10. Internet user 3' must start a browser 15, and must connect it to input unit 4' by the program of a browser 15. A browser will start the homepage included in input unit 4' in the same procedure as the network has been started by the browser 15 on the internet 2 of this **, while carrying out in many cases. Consequently, internet user 3' can set up the parameter of an input unit on a homepage, and such an access can access image data as if it was finished by downloading a file from internet 2.

[0019] Drawing 5 shows another gestalt of this invention of the connection with internet 2. here -- an input unit -- four -- ' -- an output unit -- five -- ' -- and -- internet -- a user -- three -- ' -- a server -- six -- depending -- connection -- passing -- a regional network (Regional Network) 7 -- forming. A regional network 7 will be further connected with the internet 2 of a vast network. By connection between internet 2 and the regional network 7, internet user 3' from the network which is different under such configuration can start output unit 5' or picture-input-device 4' of this invention.

[0020] Drawing 6 shows another example of this invention. It relates to the run add-on box 8 which offers the interface linked to internet. A run add-on box can be connected with the input unit (or output unit) of a prior art. That is, a computer system can be flown and equipment can be directly connected with internet. And the equipment is defined by the internet user as a network which can be started directly. The run add-on box 8 is electrically connected to the input unit 4 or the output unit 5. Here, generally the input unit 4 or the output unit 5 is equipment connectable with a computer system 1. An input unit 4 will take the type of a picture input device (a thing like a scanner, a video camera, or a digital camera), or an audio input unit, and an output unit 5 will take the type of a printer etc. Although only the input unit 4 connected to the run add-on box 8 offered with the interface for an Internet connectivity in drawing 5 is shown, a run add-on box is connectable also with an output unit 5.

[0021] The run add-on box 8 serves as the interface controller 49, the central processing unit 43, the IP selector 46, and the network communication protocol setup device 45 from the network controller 47 as illustrated in drawing 6. A picture input device is again used, in order to explain this gestalt of this invention. The direct file of the input unit 4 which is a prior art is carried out to the interface controller 49, and it supplies input picture signal IS. Under flowing of the control signal explained in drawing 3, the interface controller 49 sends picture signal IS to system RAM through a central processing unit 43, in order to transmit further. A central processing unit 43 accesses a communications protocol so that it can have the IP address to which the input unit was fixed, and it becomes internet user 3' through the network communication protocol setup device 45 and a fixed IP address. It is determined by IP selector in the procedure of a network connection that the fixed IP address was clarified in drawing 3. So, an input unit 4 becomes the network which can be directly started by the browser 15 through internet 2. The network communication setup device 45 is further connected to the network controller 47, in order to supply the interface for connecting with internet 2. If the

network communication protocol setup device 45 connects with internet 2 via the network controller 47 and completes a setup of a communications protocol, a central processing unit 43 will be transmitted to internet 2 for the internet user who started the input unit 4 used in order to access the picture signal recorded on system RAM at the picture signal of those objects needed. Consequently, the input unit 4 of well-known technique enables it to become the network in which a browser 15 starts directly, and the run add-on box 8 which is this invention enables it to become the input unit contained in internet configuration.

[0022] It is not limited to the run add-on box 8 being connected to a picture input device like a scanner, a digital camera, or a video camera. It can also be tied to other input units or output units of the gestalt. this invention attains the user-friendliness which is convenient and is helpful with an easy introduction by enabling easy connection with the existing network system. An independent internet user becomes one network in internet that it is a control person for choosing the IP address, and by performing the adjustment work. Furthermore, this invention enables it to use many the inputs or output units with the same user, in order to save such a cost to the purchase of a peripheral device. It is raised when the use luminous efficacy of hardware also enables this invention to transmit to a network directly.

[Translation done.]

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Field

[The technical field to which invention belongs] this invention relates to the digital picture input device for network interface connection especially in relation to a digital picture input device.

[Translation done.]

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Technique

[Description of the Prior Art] The personal computer (PC) has been broadly used for a high-speed calculation and the access to huge data. Generally PC consists of an input unit (an example:keyboard, mouse), an arithmetic unit (an example:central arithmetic unit, memory), auxiliary memory (example:hard disk), and an output unit (an example:monitor, printer). Since the property of "personal operation" was emphasized, since PC user constitutes the system of PC from a peripheral device, he gives encouragement in arranging one after another. However, PC user has been required to always upgrade their computer and a facility so that processing can be more quickly accessed with rapid development of an information industry at more data.

[0003] However, the occurrence of internet changed the definition of PC gradually. It means sharing the idea of the network computer architecture (NCA) defined by the oracle company between the computers of the client terminal through the Internet connectivity which used Web technique for the resources of a server, and the facility. Net announced by Microsoft PC design is Net as a branch (however, it is not a perfect substitute) of a computer family. PC thinks that it asks for the perfect internet for the platform for work of an operating system and application. Consequently, the user interface with the both same [the computer of a client and a server] is shared. What "the internet as a user interface" will be a very important epoch-making incident in a development of PC will not interfere, even if it is predicted, although definitions of PC (Net PC) given by the business firm of a mainstream computer may differ. Moreover, the navigator browser introduced by the netscape company in 1995 for World Wide Web (World Wide Web) removed the bail of the epoch-making age of computing which makes Web possible. And the computer development with Web technique was led and it was enabled to send the signal of a lot of multimedia data (a text, an audio, an image, and animation) on internet by the powerful navigator program.

[0004] Drawing 1 shows the relation between a common input unit, an output unit, a computer system, and internet. Here, a reference mark 1 expresses the computer system by the prior art. This consists of an application program 14, the platform 11 for work, a browser 15, drivers 12 and 16, and interfaces 13 and 17. It is set to one of the internet users 3 when a computer system 1 is connected with internet 2 through the communication equipment 10 (specifically a modem and a network card) of a network. In order to pull out digital data like image data or audio data by the operating environment proposed in drawing 1 , a user has to input data into the computer system 1 which processes with an input unit 4. Usually, it connects with an interface 13 (example:interface card), and an input unit 4 is needed in order that a driver 12 may finish such processing. Then, data are processed by the software program by the digital data for transmitting to internet from a browser 15 and the network-connection facility 10 further on the platform for work 11 using an application program.

[0005] In the input of image data, a digital camera, a video camera, or an image scanner is sufficient as an input unit 4. The image data by which made it such, and was pulled out or the scan was carried out is sent to the platform for work 11 through an image driver interface (example:TWAIN). The platform for work 11 processes transmit data to the format (example : GIF, JPEG) which followed the required matter of network picture image sending with picture image application. Finally, data are further processed through a browser 15 and the network-

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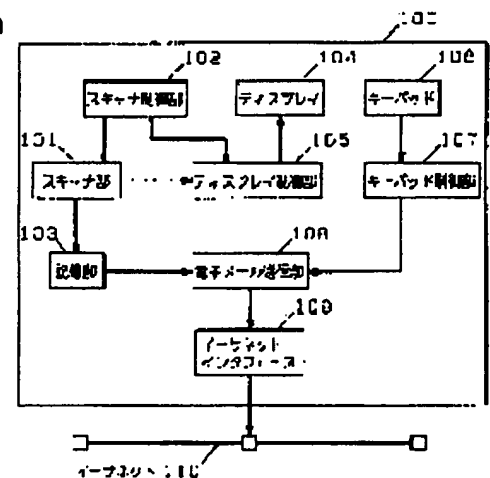
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(54) PICTURE INPUT DEVICE

(57)Abstract:

PURPOSE: To execute a picture read operation and the transmission of picture data to plural opposite parties by means of an electronic main with a single picture input device body by providing a scanner, a picture data storage part and an electronic mail transmission part.

CONSTITUTION: Picture data which is read by the scanner 101 is stored in the storage part 103, is inputted to a display control part 105 and is displayed on a display 104. When the address of a transmission destination is inputted from a key pad 106, a key pad control part 107 converts transmission destination address information into an ASCII code and outputs it to the electronic mail transmission part 108. The electronic mail transmission part 108 reads picture data from the storage part 103, converts picture data into the ASCII code, generates the electronic mail by adding a transmission destination address and outputs the electronic mail to an 'Ethernet(R)' 10 through an 'Ethernet(R)' interface 109. Thus, the picture read operation can be executed by the picture input device single body, and picture data can be transmitted by the electronic mail.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the picture input device which reads a picture as image data.

[0002]

[Description of the Prior Art] In recent years, the system which uses image data is increasing with progress of multimedia technology, and a scanner is used in many cases as an input means of image data. With the network, a scanner is connected to a network and it succeeds also in the attempt effectively utilized as resources on a network.

[0003] Hereafter, the picture input device using the conventional scanner is explained. The thing of JP,5-274397,A is in a network as an example of the structure of a system which connected the scanner, and drawing 8 shows the composition of this image processing system.

[0004] For a network and 805, as for a server process and 807, in drawing 8, a client process and 806 are [the image processing system with which a host computer and 802 were equipped with the scanner printer server and, as for 803, 801 was equipped with the scanner and the printer, and 804 / a scanner printer control signal and 808] data signals.

[0005] About the image processing system constituted as mentioned above, the operation is explained below. The client process 805 for controlling an image processing system 803 by the host computer 801 is performed. Moreover, in the scanner printer server 802, the server process 806 which controls an image processing system based on control of the client process 805 is performed. The client process 805 communicates to a server process 806 through a network 804, and performs reading of the picture in an image processing system, and operation of printing. The data signal 808 used for I/O of the scanner printer control signal 807, and the image data and synchronizing signal which transmit directions of I/O of a scanner printer is between the scanner printer server 802 and an image processing system 803.

[0006] Thus, the above-mentioned Prior art can also connect a scanner to a network, and can be used as a shared resource of a network.

[0007]

[Problem(s) to be Solved by the Invention] However, since the scanner server which controls a scanner by the above-mentioned conventional image processing system in response to directions through the network from a client process was required, it had the problem that system-wide cost became high.

[0008] Moreover, since it cannot transmit to two or more partners containing the information terminal of the network of the distant place which cannot use a scanner server for the read image data etc. from a picture input device, When transmitting image data to two or more partners, memorize image data to the auxiliary memory of a scanner server, or Image data is read into the information terminal of a client side through a network, it memorizes to auxiliary memory, and the procedure of transmitting the image data to two or more partners had to be completed.

[0009] Since moreover and image data are binary data with large data size, Except for some [, such as MHS (X.400),] protocols, if it remains as it is, it cannot transmit by the E-mail. After he makes data size sufficiently small, in order that the addresser of an E-mail divides after changing image data into an ASCII code, and he may transmit by the E-mail, Generally as a distribution means of the image data inputted by the picture input device, the E-mail was not used, for example, the image data between information terminals was delivered with meanses, such as a file transfer by the FTP command, on the network of a TCP/IP protocol.

[0010] this invention is ** [0011] for the purpose of offering the picture input device which can solve the above-mentioned conventional technical problem, and can operate picture reading with a picture-input-device simple substance, and can perform transmission by the E-mail to two or more partners of image data.

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the picture input device of this invention The scanner which reads a picture and outputs image data as the 1st composition, A scanner control section equipped with a reading start button, and the storage section which stores image data, The display which displays

image data, and the display control section which displays the image data which the scanner outputs on a display, The keypad which inputs the transmission place of an E-mail, and the keypad control section which outputs the ASCII code corresponding to the input from a keypad, The transmission place address information of the E-mail which reads the image data of the storage section and is outputted from a keypad control section is added, and it has the E-mail transmitting section which creates and outputs an E-mail, and the network connection section which outputs the output of the E-mail transmitting section to a network.

[0012] Moreover, the 2nd composition of this invention is equipped with the data compression section which carries out compression processing of the image data which the scanner read in addition to the 1st composition of the above, and is outputted to the storage section.

[0013] The 3rd composition of this invention in the 1st composition of the above Moreover, in addition, a pen input device, The coordinate input screen of the pen input device by which the input part of operation of a reading start, mail transmission, or mail address selection is assigned to the specific coordinate field, The pen input device control section which outputs the directions information on operation when the operation which computes a specification coordinate from the input of a pen input device and a coordinate input screen, is assigned to the coordinate, and shines exists, The address storage section which stores the transmission place address of an E-mail, It has the address selection section which chooses the mail address corresponding to the mail address selection information which a pen input device control section outputs from the mail address read from the address storage section, and is outputted to the E-mail transmitting section.

[0014] The 4th composition of this invention in the 1st composition of the above Moreover, in addition, a pen input device, The coordinate input screen of the pen input device by which the input part of operation of a reading start, mail transmission, or mail address selection is assigned to the specific coordinate field, The pen input device control section which outputs the directions information on operation when the operation which computes a specification coordinate from the input of a pen input device and a coordinate input screen, is assigned to the coordinate, and shines exists, The address reference section which takes out mail address information from the e-mail address database connected to the network, It has the address selection section which chooses the mail address corresponding to the mail address selection information which a pen input device control section outputs from the mail address read from the address reference section, and is outputted to the E-mail transmitting section.

[0015]

[Function] By the 1st composition of the above, this invention can operate picture reading only by the picture-input-device main part, and can perform transmission by the E-mail of image data.

[0016] By the 2nd composition of the above, since the size of the E-mail to output becomes small while mitigating consumption of the storage capacity of the storage section in a picture input device by having the data compression section, this invention can mitigate the load of a network and can mitigate the load of the storage of the information terminal of a transmission place further again.

[0017] By the 3rd composition of the above, this invention can enable operation by the pen input device, and can raise the operability of a picture input device again.

[0018] this invention can raise the versatility of a picture input device by using the database system on a network while it enables operation by the pen input device and raises the operability of a picture input device by the 4th composition of the above again.

[0019]

[Example]

(Example 1) The 1st example of this invention is explained hereafter, referring to drawing 1 . The scanner with which 101 actually reads a picture in drawing 1 , the scanner control section which 102 equips with a picture reading start button; The storage section holding the image data which 103 read, and 104 display. The display control section which displays the image data to which 105 is outputted from a scanner 101 on a display 104, The keypad into which 106 can input the alphabetic character and special symbol for the transmission place input of an E-mail, The keypad control section to which 107 outputs the input from a keypad 106 by the ASCII code, As for the E-mail transmitting section which 108 reads image data from the storage section 103, and creates an E-mail, the Ethernet interface with which 109 connects Ethernet with a picture input device, and 110, Ethernet and 100 are picture input devices.

[0020] In addition, although the case where Ethernet is used as a network environment here is explained, when using other network environments, such as FDDI, for example, it can be used similarly.

[0021] About the picture input device constituted as mentioned above, the operation is explained below. Here, the case where UNIX mail (RFC822) is used as an E-mail is explained. If a user pushes the picture reading start button of the scanner control section 102, the scanner control section 102 is read into the display control section 105, while transmitting a start, a scanner 101 will be controlled and a scanner 101 will read a picture. The read image data is outputted to the storage section 103 and the display control section 105, the storage section 103 stores image data and

the display control section 105 displays the inputted image data on a display 107. If a user inputs the address of the transmission place of an E-mail from a keypad 106, the keypad control section 108 will change transmission place address information into an ASCII code, and will output it to the E-mail transmitting section 108.

[0022] If transmission place address information is inputted into the E-mail transmitting section 108, it reads image data from the storage section 103, changes image data into an ASCII code, will add transmission place address information, will create the E-mail of UNIX mail (RFC822) form, and will output an E-mail to Ethernet 110 through the Ethernet interface 109. In the case of the size in which the size of the image data changed into the ASCII code exceeds 50 K bytes, the E-mail transmitting section 108 creates two or more E-mails, after dividing image data every 50 K bytes, and two or more E-mails are outputted to Ethernet 110 through the Ethernet interface 109.

[0023] In addition, although the case where UNIX mail (RFC822) was used as an E-mail here was explained, the mail system of an MHS (X.400) protocol can be used similarly, for example. When using MHS (X.400), it becomes unnecessary [the conversion to the ASCII code in eye a possible hatchet and the E-mail transmitting section 108, and division processing of image data] to incorporate binary data to an E-mail in size as it is.

[0024] Drawing 2 shows the example of the structure of a system in the case of using the picture input device of drawing 1. In drawing 2, the picture input device which showed 201 by drawing 1, and 202a and 202b of a personal computer and 203 are [a printer and 204] Ethernet. About the system constituted as mentioned above, the use gestalt is explained below. When the user of personal computer 202a uses a picture input device 201, a picture can be read by installing a manuscript in a picture input device 201, and pushing a picture reading start button. The image data read from the keypad of a picture input device 201 in inputting one's e-mail address can be transmitted to its personal computer 202a. When distributing the image data furthermore read to the user of personal computer 202b, an E-mail can be transmitted in inputting a partner's mail address.

[0025] A user can receive the E-mail transmitted from the picture input device 201 with each one of personal computers, and image data can be used by taking out image data. Moreover, a user can also output the taken-out image data to the printer 203 connected to Ethernet.

[0026] As mentioned above, since the information terminal linked to a picture input device is unnecessary while according to this example a picture-input-device simple substance can perform transmission by the E-mail to operation of picture reading, and two or more partners of image data who read and mitigating a user's work, system-wide cost can be made low.

[0027] (Example 2) Next, the 2nd example of this invention is explained, referring to drawing 3. The scanner with which 301 actually reads a picture in drawing 3, the scanner control section which 302 equips with a picture reading start button, The data compression section which 303 carries out compression processing of the read image data, and is outputted, The storage section in which 304 stores the output data of the data compression section 303, and 305 display. The display control section as which 306 displays the output data of a scanner 301 on a display 305, The keypad into which 307 can input the alphabetic character and special symbol for the transmission place input of an E-mail, The keypad control section which 308 changes the output of a keypad 307 into an ASCII code, and is outputted, As for the E-mail transmitting section which 309 reads compressed data from the storage section 304, and is outputted by the E-mail, the Ethernet interface with which 310 connects Ethernet with a picture input device, and 311, Ethernet and 300 are picture input devices.

[0028] In addition, although the case where Ethernet is used as a network environment here is explained, when using other network environments, such as FDDI, for example, it can be used similarly.

[0029] About the picture input device constituted as mentioned above, the operation is explained below. Here, the case where UNIX mail (RFC822) is used as an E-mail is explained. If a user pushes the picture reading start button of the scanner control section 302, the scanner control section 302 controls a scanner 301 while it reads and transmits a start to the display control section 306, a scanner 301 will read a picture and the read image data will be outputted to the data compression section 303 and the display control section 306.

[0030] The data compression section 303 carries out compression processing of the output data of a scanner 301, and outputs them to the storage section 304, and the storage section 304 stores image data. The display control section 306 displays the output data from a scanner 301 on a display 305. If a user inputs the address of the transmission place of an E-mail from a keypad 307, the keypad control section 308 will change the output data of a keypad 307 into an ASCII code, and will output them to the E-mail transmitting section 309 as transmission place address information. If transmission place address information is inputted into the E-mail transmitting section 309, it reads compression image data from the storage section 304, changes it into an ASCII code, will add transmission place address information, will create an E-mail, and will output an E-mail to Ethernet 311 through the Ethernet interface 310.

[0031] When the size of the image data changed into the ASCII code exceeds 50 K bytes, after dividing image data every 50 K bytes, an E-mail is created, and the multiple-times output of the E-mail is carried out to Ethernet 311 through the Ethernet interface 310. In addition, although the case where UNIX mail (RFC822) was used as an E-mail

here was explained, the mail system with MHS (X.400) protocol can be used similarly, for example. When using MHS (X.400), it becomes unnecessary the conversion to the ASCII code in a possible hatchet and the E-mail transmitting section 108, and division processing of image data] to incorporate binary data to an E-mail in size as it is.

[0032] As mentioned above, since the data which the storage section stores are compressed data according to this example, while consumption of the storage capacity of the storage section is mitigable, since the data contained in the E-mail which a picture input device outputs are compressed data, as compared with the E-mail containing incompressible image data, the size of an E-mail becomes small, the load of a network is mitigated, and they can mitigate consumption of the storage of the information terminal of a transmission place further.

[0033] (Example 3) Next, the 3rd example of this invention is explained, referring to drawing 4. 406 is the display control section as which the scanner with which 401 actually reads a picture, the storage section in which 402 stores a scanner control section and the image data into which 403 was read, and 404 display the address information of image data or an E-mail on a display in drawing 4, and 405 displays it on a display, and a pen input device which inputs the transmission place of picture reading operation or an E-mail.

[0034] The coordinate input screen with which 407 reads and each input part corresponding to a start, mail transmission, address selection, or operation of page turning over of an address list and the alter operation of a number is assigned to the specific coordinate field and which it writes, 409 is the pen input device control section which outputs movement directive information when the operation which 408 computes a coordinate from the input from the pen input device 406 and the coordinate input screen 407, and is assigned to the coordinate exists, and the address storage section in which the list of the address of an E-mail is stored.

[0035] As for the address judging section which chooses and outputs the address corresponding to the address selection information which 410 reads address information from the address storage section 409, and is inputted from the pen input device control section 408, the E-mail transmitting section which 411 reads the image data of the storage section 403, and creates an E-mail, the Ethernet interface with which 412 connects Ethernet with a picture input device, and 413, Ethernet and 400 are picture input devices.

[0036] In addition, although the case where Ethernet is used as a network environment here is explained, when using other network environments, such as FDDI, for example, it can be used similarly.

[0037] About the picture input device constituted as mentioned above, the operation is explained below. Here, the case where UNIX mail (RFC822) is used as an E-mail is explained. If a user specifies the portion the reading start of of the coordinate input screen 407 is written using the pen input device 406, the pen input device control section 408 will compute a coordinate from the output of the pen input device 406 and the coordinate input screen 407, and the coordinate will judge whether it corresponds to specific operation. In this case, since it reads and corresponds to start operation, it reads into the scanner control section 402, and a start is directed.

[0038] The scanner control section 402 transmits a picture reading start to the display control section 405 while it controls a scanner 401 and starts reading for a picture. A scanner 401 reads a picture and outputs image data to the storage section 403 and the display control section 405. The storage section 403 stores the image data inputted from the scanner 401. The display control section 405 displays the image data inputted from the scanner 401 on a display 404.

[0039] Moreover, the display control section 405 reads mail address information from the address storage section 409, and displays an address list on a display 404 with the number of ascending order. When all mail addresses cannot be displayed in 1 screen, the number which added 1 to the number which displayed only the possible address with the number of ascending order, and displayed it at the end is memorized. A user chooses the address of hope out of the address list currently displayed on the display 404, when performing transmission by the E-mail of image data, it inputs by specifying the portion written by the pen input device 406 in the number currently displayed corresponding to the address, and the portion the address selection [portion] on the coordinate input screen 407 is written specifies, and selection of the address declares. [the number of the coordinate input screen 407]

[0040] If selection of the address is declared, the pen input device control section 408 will output the number and the address selection information that it was inputted to the address judging section 410. The address judging section 410 reads address information from the address storage section 409, chooses the address corresponding to the number inputted from the pen input device control section 408, and holds the address information.

[0041] When carrying out the multiple selection of the address, this operation is repeated two or more times. Moreover, if the portion page turning over [the coordinate input screen 407] of is written is specified when choosing the non-displayed address as a display 404, the pen input device control section 408 directs page turning over to the display control section 405. The display control section 405 is displayed on a display 404 with the number of ascending order from the number which chose the address information corresponding to the number memorized from the address list, and had memorized the address information of only the number which can be displayed in 1 screen

• from the address information.

[0042] Thus, a user chooses all required mail addresses and specifies the portion of the E-mail transmission on the selection kick label input screen 407 of is written by the pen input device. If E-mail transmission is specified, the pen input device control section 408 will transmit directions of E-mail transmission to the address judging section 410. The address judging section 410 will output directions of the address information currently held and E-mail transmission to the E-mail transmitting section 411, if directions of E-mail transmission are received. If E-mail transmitting directions are received, it reads image data from the storage section 403, changes image data into an ASCII code, the E-mail transmitting section 411 will add address information, will create an E-mail, and will output an E-mail to Ethernet 413 through the Ethernet interface 412.

[0043] When the size of the changed image data exceeds 50 K bytes, image data is divided every 50 K bytes, and it divides and outputs to multiple times. In addition, although the case where UNIX mail (RFC822) was used as an E-mail here was explained, the mail system of an MHS (X.400) protocol can be used similarly, for example. When using MHS (X.400), it becomes unnecessary [the conversion to the ASCII code in eye a possible hatchet and the E-mail transmitting section 108, and division processing of image data] to incorporate binary data to an E-mail in size as it is.

[0044] As mentioned above, since a mail address can be set up only by being able to perform operation of picture reading or E-mail transmission by specifying the predetermined portion of a coordinate input screen by the pen input device, and seeing a display, choosing address information, and inputting a number from the number input portion of a coordinate input screen by the pen input device according to this example, the operability of a picture input device can be raised.

[0045] (Example 4) The 4th example of this invention is explained below, referring to drawing 5. Drawing 5 makes transparent the coordinate input screen of the picture input device of drawing 4 shown in the 3rd example of the above, and installs it on a display, and although each function was assigned to the coordinate field corresponding to the operation button displayed on the display, or the position of an address list, the situation of a display and a coordinate input screen is shown.

[0046] In drawing 5, 501 is a display and one equipment of a coordinate input screen, and 502 is a pen input device. A number input area does not exist in the coordinate input screen 501, but address information selection operation is assigned to it to the coordinate field corresponding to the display position of the address information of a display 501. The composition and operation of this picture input device of those other than this point are the same as that of what was shown in the 3rd example of the above.

[0047] The example of the structure of a system which used the picture input device of drawing 5 is shown in drawing 6. In drawing 6, the personal computer with which a picture input device uses 601 and Users A, B, C, D, and E use 602a, 602b, 602c, 602d, and 602e, respectively, and 603 are networks. Although it is considering as the network used by five persons in order to simplify explanation, it can carry out similarly about the case where it is used by N persons.

[0048] By drawing 5, User A reads a picture using a picture input device, and the display of a picture input device in the case of transmitting an E-mail to User A and User C and the situation of a coordinate input screen are shown. User A can read a picture by specifying the reading button on a display and the one equipment 501 of a coordinate input screen by the pen input device 502. Moreover, an E-mail can be transmitted by carrying out selection specification of the address of User A and User C by the pen input device 502, and specifying a mail transmitting button out of five network users' mail address currently displayed on a display and the one equipment 501 of a coordinate input screen.

[0049] As mentioned above, according to this example, by specifying the position of the operation button displayed on the display by the pen input device, since the transmission place of reading operation of a picture or an E-mail can be inputted, the operability of a picture input device can be raised more.

[0050] (Example 5) Next, the 5th example of this invention is explained, referring to drawing 7. In drawing 7, the scanner with which 701 actually reads a picture, and 702 A scanner control section, The storage section which stores the image data which 703 read, and 704 display. The display control section as which 705 displays the address information of image data or an E-mail on a display, The pen input device into which 706 inputs the transmission place of picture reading operation or an E-mail, The coordinate input screen with which 707 reads and each input part corresponding to a start, mail transmission, address selection, or operation of page turning over of an address list and the alter operation of a number is assigned to the specific coordinate field and which it writes, The pen input device control section which outputs movement directive information when the operation which 708 computes a coordinate from the input from the pen input device 706 and the coordinate input screen 707, and is assigned to the coordinate exists, The address reference section which 709 accesses the mail address database system connected to Ethernet, and reads the address information of an E-mail, The address judging section which chooses and outputs the address corresponding to the address selection information which 710 reads address information from the address reference

section 709, and is inputted from the picture input device control section 708, The E-mail transmitting section which 711 reads the image data of the storage section 703, and creates an E-mail, The Ethernet interface with which 712 connects Ethernet with a picture input device, The mail address database with which a picture input device and 713 store Ethernet and, as for 714, 700 stores the address information of an E-mail, The database server with which 715 reads and offers address information from a mail address database in response to the reference demand from the outside, and 716 are mail address database system.

[0051] In addition, although the case where Ethernet is used as a network environment here is explained, when using other network environments, such as FDDI, for example, it can be used similarly.

[0052] About the picture input device constituted as mentioned above, the operation is explained below. About the main operation, it is the same as that of the 3rd example of the above. It is operation at the time of the display control section 705 and the address judging section 710 reading mail address information that the 3rd example of the above differs from operation.

[0053] The address reference section 709 accesses the database server 715 of the mail address database system 716 connected to Ethernet through the Ethernet interface 712, and transmits the demand of refer to the mail address. If a database server 715 receives a demand, from the mail address database 714, address information will be read and the read address information will be passed.

[0054] The address reference section 709 holds the received address information, and outputs address information according to the demand of address information read-out from the display control section 705 or the address judging section 710.

[0055] For example, when the users of a network newly increase in number, the change inside a picture input device 700 is unnecessary, and should just register a new user's mail address into the mail address database 714. Moreover, if the mail address database system connected to the network exists when a picture input device 700 is moved to other network environments, it can have [no change inside a picture input device 700] completely be used similarly.

[0056] According to this example, the versatility of a picture input device can be raised as mentioned above by not having mail address information in the interior of a picture input device, but using the mail address database system connected to the network.

[0057]

[Effect of the Invention] As mentioned above, the scanner which this invention reads a picture as the 1st composition, and outputs image data, A scanner control section equipped with a reading start button, and the storage section which stores image data, The display which displays image data, and the display control section which displays the image data which a scanner outputs on a display, The keypad which inputs the transmission place of an E-mail, and the keypad control section which outputs the ASCII code corresponding to the input from a keypad, The E-mail transmitting section which adds the transmission place address information of the E-mail which reads the image data of the storage section and is outputted from a keypad control section, and creates and outputs an E-mail, While being able to operate picture reading with a picture-input-device simple substance by having the network connection section which outputs the output of the E-mail transmitting section to a network, transmission by the E-mail of image data can be performed.

[0058] Furthermore, this invention can mitigate the load of a network and can mitigate consumption of the storage of the information terminal of the addressee of an E-mail further while it can lessen storage capacity of the storage section in a picture input device by having the data compression section which carries out compression processing of the image data which the scanner read in addition to the 1st composition of the above, and is outputted to the storage section.

[0059] Furthermore, this invention in the 1st composition of the above In addition, the coordinate input screen of the pen input device by which the input part of operation of a pen input device, a reading start and mail transmission, or mail address selection is assigned to the specific coordinate field, The pen input device control section which outputs the directions information on operation when the operation which computes a specification coordinate from the input of a pen input device and a coordinate input screen, is assigned to the coordinate, and shines exists, The address storage section which stores the transmission place address of an E-mail, By having the address selection section which chooses the mail address corresponding to the mail address selection information which a pen input device control section outputs from the mail address read from the address storage section, and is outputted to the E-mail transmitting section The reading operation of a picture and the input of the transmission place of an E-mail by the pen input can be enabled, and the operability of a picture input device can be raised.

[0060] Furthermore, this invention in the 1st composition of the above In addition, the coordinate input screen of the pen input device by which the input part of operation of a pen input device, a reading start and mail transmission, or mail address selection is assigned to the specific coordinate field, The pen input device control section which outputs the directions information on operation when the operation which computes a specification coordinate from the input

- of a pen input device and a coordinating screen, and is assigned to the control section. If it exists, The address reference section which takes out mail address information from the e-mail address database connected to the network, By having the address selection section which chooses the mail address corresponding to the mail address selection information which a pen input device control section outputs from the mail address read from the address reference section, and is outputted to the E-mail transmitting section While enabling the reading operation of a picture and the input of the transmission place of an E-mail by the pen input and raising operability, the versatility of a picture input device can be raised by using the database system on a network.

[Translation done.]